Cortical arousals and periodic limb movements during sleep are associated with lower quality of life in children with monosymptomatic nocturnal enuresis.

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Purpose: To investigate whether cortical arousals and periodic limb movements (PLMS) during sleep are related to daytime psychological functioning in children with monosymptomatic nocturnal enuresis (MNE) based on nocturnal polyuria (NP).
Patients and methods: Thirty children (7 girls) 6 to 16 years (mean 10.43y, SD (+/-3.08)) with MNE and NP referred to a tertiary enuresis centre were included. This multi informant multi method study includes overnight video-polysomnography, questionnaires, clinical interviews and neuropsychological testing.
Results: An increase in PLMS and in cortical arousals were both associated with an increase of the score on the Pediatric incontinence Quality of life questionnaire (PinQ), indicating a lower quality of life (QoL), according to the child (respectively $\rho=0.517$, $p<0.01$; $\rho=0.431$, $p<0.05$)). There is a positive linear relationship between the PLMS and rulebreaking behaviour according to the parents ($\rho=0.413$, $p<0.05$). There is a positive linear correlation between PLMS and sustained attention ($\rho=0.388$, $p<0.05$). Cortical arousals have a negative linear relationship with planning problems, an executive function, according to the teachers ($\rho=-0.409$, $p<0.05$).
Conclusion: This study clarifies the relationship between sleep parameters and psychological functioning of the child with MNE according to the child, the parents and the teachers. In children with MNE and NP, PLMS and cortical arousals are both associated with a lower QoL of the child.